



# Hose styles & selection

## corrugated metal hose

### Description

Corrugated metal hose is manufactured from relatively thin wall butt-welded tube into which rounded corrugations are formed. The hose flexes through the movement of the metal corrugations.

Corrugated metal hoses are suitable for a wide range of applications in the steel making, chemical Smelting, petrochemical, automotive, materials handling and power generation industries, and many other fields. The hose can be used for the conveyance of fluids and gases, the correction of misalignments and the absorption of movements and vibrations.

The advantage of metal hose over other materials is its capability to withstand high temperatures, impacts, and corrosive substances and atmospheres.

Corrugated hose is seamless, making it ideal for the conveyance of liquids and gases under pressure.

### Hose style

The corrugations in the hose can be either parallel with each other, the hose being called Annular Corrugated Hose; or spirally winding along the length of the hose, the hose then being called helical Corrugated Hose. The helical corrugation is vertically a continuous corrugation similar to sea a screw thread.

### Manufacturing process

The corrugations can be formed either by mechanical forming or hydraulic forming.

In mechanical forming, the corrugations are rolled into the wall of the tube whereas in hydraulic forming, the corrugations are gently moulded out from the wall through internal pressure using water as the forming medium.

Hydraulic forming creates a hose with less metal stress during the forming process and higher corrugations than the mechanically formed hose resulting in a more flexible (supple) hose with a longer service life. Each corrugation is formed individually which prevents metal thinning on the crown of the corrugation which is evident in other methods of forming and single operation multi-corrugation forming.

### Pressure capability enhancement

corrugated hoses can be used either unreinforced (i.e. unbraided) or with wire braid reinforcement depending upon the pressure rating of the application.

Unreinforced corrugated hoses will tend to elongate back to the straight tube from which they have been formed when pressure is applied.

External wire braiding fitted to the hose and secured at each end during the end connection process will significantly increase the pressure capability of the hose. More than one layer of braid may be fitted as necessary.

Wire braid sometimes be fitted purely to provide on external protection for the corrugations.

Selection Guide for hose in applications with:-

	Helical		Annular	
	Mechanical Formed	Mechanical Formed	Mechanical Formed	Hydraulic Formed
Constant Flexing	x	x		√
High Vibration	x	x		√
Possible Minor Torsion	x	√		-
Gravity Feed	√	-		-
Short Hose Length	-	-		√